**CHE 111L 032, 033, 034**  
**Introductory Chemistry Laboratory, Fall 2018**  
(Students must be enrolled in CHE 111 class as well)

<table>
<thead>
<tr>
<th>Name</th>
<th>Ms. Catherine Kwiatkowski</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>Chemistry &amp; Biochemistry</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:kwiatkowc@sfasu.edu">kwiatkowc@sfasu.edu</a></td>
</tr>
<tr>
<td>website</td>
<td>course information on D2L</td>
</tr>
<tr>
<td>Phone</td>
<td>936-468-2175</td>
</tr>
<tr>
<td>Office</td>
<td>Math 110</td>
</tr>
<tr>
<td>Office Hours</td>
<td>MWF: 10:00 – 10:50</td>
</tr>
<tr>
<td></td>
<td>M: 1:00-2:00</td>
</tr>
<tr>
<td></td>
<td>TTh: 2:00-3:15</td>
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<td></td>
<td>Separate appointments and drop-ins may be scheduled</td>
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</table>

**Course Description:** Introductory laboratory experiments.

**Number of Credit Hours:** 1 semester hour – 2 lab days, Tues and Thurs, each 1 hour 15 minutes

**Course Prerequisites and Co-requisites:** Co-requisite: CHE 111. Lab fee required.

**Course Objective:** To provide students with an explanation of the basic principles of chemistry as illustrated through laboratory experiments and to apply these principles to laboratory work involving critical thinking.

**Class location & time:**

<table>
<thead>
<tr>
<th>lab section</th>
<th>pre-lab lecture location</th>
<th>lab location</th>
<th>Discussion + lab time</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>C-106</td>
<td>C-102</td>
<td>9:30-10:45 TTh</td>
</tr>
<tr>
<td>33</td>
<td>C-106</td>
<td>C-103</td>
<td>9:30-10:45 TTh</td>
</tr>
<tr>
<td>34</td>
<td>C-106</td>
<td>C-105</td>
<td>9:30-10:45 TTh</td>
</tr>
</tbody>
</table>

**Text and Materials:** *Introductory Chemistry Lab (CHE 111 L) Laboratory Manual.* This manual is available at local bookstores. A non-programmable, scientific calculator is required for all exams and quizzes. Communication for lab will be sent through D2L.

**Grading Policy:**

**Laboratory quizzes (70 pts)**

Quizzes will be given on Thursdays, after lecture. It will be beneficial to work out the pre-lab beforehand, since the quiz questions may resemble the prelab questions. The lowest quiz grade will be dropped. The 7 best quiz grades will be kept. Each laboratory quiz is worth **10 points. A total of 70 points from laboratory quizzes is possible.** The laboratory quiz will be given at the beginning of discussion on Thursdays. STUDENTS WHO MISS THE QUIZ UNEXCUSED WILL NOT BE ALLOWED TO TAKE THE QUIZ.

**Laboratory experiments (70 pts)**

Eight laboratory experiments will be done. Each report sheet for the experiment is worth **10 points.** The lowest experiment/assignment will be dropped, and the best 7 experimental grades will be kept. **A total of 70 points from experiments is possible.** Because it is sometimes difficult to finish labs by 10:45, lab reports and prelabs are due the following day, Wednesday, by 3:00 in Math Bldg, Room 110 (My office). Any assignment turned in after 3:00 Wednesday will have significant late points deducted. Lab reports over a week late will not be accepted.
Teamwork Rubric (10 pts)

Completion of Teamwork Core Assessment Rubrics for all group members after the completion of titration labs. The rubric is submitted to both the instructor and to a dropbox set up to receive Core Assessment Rubrics. Please make certain the form is readable before you submit. (It’s a word document in which tables can get messed up.)

Worksheet (10 pts): Balancing equations practice, identifying types of reactions. Given around midterm week.

Midterm and Final Exam (100 pts):

- A **midterm** exam will cover material from the safety video and rules, and labs #1 - #4.
- The **final exam** will be given during the week before finals, when lab is regularly scheduled. You will not have this final during finals week. Material will cover material from Labs #5-8, along with a few questions from the beginning of the semester. A study guide will be posted.
- The midterm and the final are worth **50 points each**.

Make-up Policy: NO make-up labs will be given since the lowest experiment grade will be dropped (and the lab materials are no longer available).

ATTENDANCE POLICY:

Attendance of class is mandatory.

ACADEMIC INTEGRITY (A-9.1):

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty: Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarizing. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at [http://www.sfasu.edu/policies/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

Any student found cheating will be subject to the penalties as stated in the Student Code of Conduct handbook; including but not limited to a score of zero on exam, expulsion from the class or expulsion from the University.

STUDENTS WITH DISABILITIES:

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

CLASSROOM BEHAVIOR POLICY:

Acceptable Student Behavior: Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This
prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

- Come to lab prepared (spend at least **ONE HOUR** reading over entire lab before lab period AND reviewing the previous week’s lab) and on time.
- Bring a **NON-programmable**, scientific calculator. Cell phones and programmable calculators may NOT be used on quizzes.
- Turn off and put away cell phones; **NO** texting during lab.
- Come dressed as described in the safety rules that will be given: (Clothes to the ankles, no mid-drift shirts, closed-toe shoes. Shoes **MUST** completely cover feet. Anyone not dressed appropriately for lab will be sent home.)
- Follow all safety rules and good laboratory practices at all time:
  - Wear safety glasses/goggles when anyone in the lab is working on an experiment. If you are finished, go to room C106 to finish the lab report.
- One warning concerning safety glasses/goggles will be given. A person will be sent home for a second offense and be will earn a zero that may **NOT** be dropped.
- **NO** horseplay in laboratory
- Be courteous and respectful of other students, laboratory assistants, and stockroom personnel.
- Learn your section number and your laboratory assistant's name.
- Work with assigned lab partner unless otherwise instructed by the lab assistant.
- Students are responsible for any answer they report on a lab, assignment, or quiz. Laboratory teaching assistants are students and sometimes may make an error or misunderstand a question. You can NOT claim the lab assistant told you the wrong answer and get points back.
- Significant figures are required on **all** answers given in lab on laboratory report sheets, assignments, quizzes, and exams.
- Absences may be assigned to anyone that disrupts class, sleeps in class, or consistently comes in late or leaves early. Any assigned absence will result in a zero for the day which can **NOT** be dropped.

**POINTS WILL BE DEDUCTED FROM YOUR GRADE FOR NOT FOLLOWING THE COURSE REQUIREMENTS OR THE LABORATORY BEHAVIOR POLICY**

**General Education Core Curriculum**

- This course has been selected to be part of Stephen F. Austin State University’s core curriculum. The Texas Higher Education Coordinating Board has identified six objectives for all core courses: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core curriculum by regular assessment of student performance on these six objectives.

- By enrolling in Chemistry 111 Lab, you are also enrolling in a Core Curriculum Course that fulfills the teamwork requirement. You will see this course on your D2L list.

- At one point during the semester, you will receive an assignment that fulfills both the requirements of this course and the needs of Stephen F. Austin State University's Core Curriculum Assessment Plan with the Texas Higher Education Coordinating Board. When you complete this one assignment, you need to upload the assignment to both your standard course dropbox determined by your Instructor and the “Core Curriculum” dropbox. The Core Curriculum dropbox will be identified by the Objective for which work is being collected. (Examples: Critical Thinking, Teamwork, Social Responsibility Empirical & Quantitative Skills, Personal Responsibility, Communication Skills-Written, Communication Skills-Written & Visual, and Communication Skills- Oral &
Visual.) Please note that this only applies to the approved assignment. All other assignments should be submitted according to regular class operations.

- When you complete the assignment mentioned above, you will upload the assignment to both the Chemistry 111 Lab dropbox and the Teamwork dropbox.

- Please note that this only applies to the specific assignment listed in the matrix below. All other assignments should be submitted according to regular class operations.

- If you have any questions, please see your instructor, or contact the Office of Student Learning and Institutional Assessment at (936) 468-1130.

- The chart below indicates the core objectives addressed by this course, the assignment(s) that will be used to assess the objectives in this course and uploaded to the D2L Teamwork dropbox this semester, and the date the assignment(s) should be uploaded to the D2L Teamwork dropbox. Not every assignment will be submitted for core assessment every semester. Your instructor will notify you which assignment(s) must be submitted for assessment in the D2L Teamwork dropbox.

- The chart below indicates the core objectives addressed by this course. The assignment(s) that will be used to assess the objectives in this course will be uploaded to a special dropbox near the end of this semester.

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>Course Assignment Title</th>
<th>Date Due in LiveText</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teamwork</td>
<td>To include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.</td>
<td>Team work rubrics</td>
<td>TBA</td>
</tr>
</tbody>
</table>

**Core Objective 2: Communication Skills: to include effective development, interpretation and expression of ideas through written, oral, and visual communication.**

**COMMUNICATION SKILLS in the sciences**

For an excellent resource in scientific communication from a highly reputable source see the information provided on the Nature website link shown below.

[http://www.nature.com/scitable/topic/scientific-communication-14121566](http://www.nature.com/scitable/topic/scientific-communication-14121566) (accessed May 31, 2013)

Three especially informative links within the link shown above are:

- Effective Communication
- Effective Writing
- Audience/Purpose

Scientific communication traditionally includes writing in third person, past tense, passive voice. In formal, scientific writing slang terms and contractions are avoided.

**Core Objective 4: Teamwork: to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.**

Definition of **TEAMWORK**: work done by several associates with each doing a part but all subordinating personal prominence to the efficiency of the whole.


**TEAMWORK General Rules**
Each team member needs:

- all ideas evaluated critically;
- treat others in the group with respect
- everyone needs to pull their weight, meet deadlines, and contribute equally;
- actions need to be followed through;
- reporting needs to be accurate and comprehensive;
- problems with under-performing team members need to be discussed openly and resolved quickly; and
- peer assessment should be given fairly
<table>
<thead>
<tr>
<th>Date</th>
<th>Lab Exercise/Assignment/Activity</th>
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<tbody>
<tr>
<td>Aug. 28</td>
<td>NO Lab meeting. Read Introduction and complete prelab questions to Lab #1 Density of Pennies Laboratory. Read rules in lab manual, page 3. Pre-watch video to help with quiz.</td>
</tr>
<tr>
<td>Aug. 30</td>
<td><strong>Instruction</strong>: Review the syllabus and the safety rules. Watch the Safety Video by the American Chemical Society (link below). Take notes on the video, study the notes, and take quiz afterwards. <a href="https://www.youtube.com/watch?v=MARP5Ti33II">https://www.youtube.com/watch?v=MARP5Ti33II</a>. Groups 1 and 2 are assigned for the next four weeks. Density measurements and calculations. Read the Teamwork Expectation section in the syllabus.</td>
</tr>
<tr>
<td>Rm 106</td>
<td><strong>ALL STUDENTS</strong></td>
</tr>
</tbody>
</table>
| Sept. 4     | **ALL STUDENTS** Lab #1: Density of Pennies Laboratory – Please have entire lab instructions already read.  
**Assignment**: CHECK INTO LABORATORY DRAWERS  
1) Complete density laboratory and perform all calculations  
2) Evaluate data, discuss findings, and provide a written summary and conclusion of your results.  
3) Turn in Density Laboratory Report before leaving lab.                                                                                                                                                                               |
| Sept. 6     | **GROUP 1** Preparation for Lab #2: Density of Water Laboratory – complete pre-lab before coming to lab.  
**Quiz 2** – Density calculations, teamwork expectations, and pre-lab information  
**Instruction**: Density, graphing and calculation. Read critical thinking information in syllabus.                                                                                                                                           |
| Rm 106      | **GROUP 1** Lab #2 - Group 1:  
**Assignment**:  
1) Complete density laboratory and perform all calculations  
2) Graph data appropriately  
3) Evaluate data, discuss findings, and provide a written summary and conclusion of your results.  
4) Turn in Density Laboratory Report before leaving lab.                                                                                                                                                                               |
| Sept. 13    | **GROUP 2** Preparation for Lab #2: Density of Water Laboratory – complete pre-lab before coming to lab.  
**Quiz 2** – Density calculations, teamwork expectations, and pre-lab information  
**Instruction**: Density, graphing and calculation. Read critical thinking information in syllabus.                                                                                                                                           |
| Rm 106      | **GROUP 2** Lab #2 - Group 2:  
**Assignment**:  
1) Complete density laboratory and perform all calculations  
2) Graph data appropriately  
3) Evaluate data, discuss findings, and provide a written summary and conclusion of your results.  
4) Turn in Density Laboratory Report before leaving lab.                                                                                                                                                                               |
| Sept. 20    | **GROUP 1** Preparation for Lab #3: Concentration and Dilution Laboratory – complete pre-lab before coming to lab.  
**Quiz 3** – Density calculations, graphing, and pre-lab information  
**Instruction**: Concentration units, dilution and solution calculations, how to make a solution, information about spectrophotometers. Read syllabus about communications skills in the sciences                                                                                           |
| Rm 106      | **GROUP 1** Lab #3 - Group 1:  
**Assignment**  
1) Complete concentration and dilution lab  
2) Discuss results with team.  
3) Turn in laboratory report before leaving lab.                                                                                                                                                                                               |
| Sept. 27    | **GROUP 2** Preparation for Lab #3: Concentration and Dilution Laboratory – complete pre-lab before coming to lab.  
**Quiz 3** – Density calculations, graphing, and pre-lab information  
**Instruction**: Concentration units, dilution and solution calculations, how to make a solution, information about spectrophotometers. Read syllabus about communications skills in the sciences                                                                 |
| Rm 106      | **GROUP 2** Lab #3 - Group 2  
**Assignment**  
1) Complete concentration and dilution lab  
2) Discuss results with team.                                                                                                                                                                                                                    |
| Oct. 02     | **GROUP 2** Lab #3 - Group 2  
**Assignment**  
1) Complete concentration and dilution lab  
2) Discuss results with team.                                                                                                                                                                                                                    |
<table>
<thead>
<tr>
<th>Date</th>
<th>Lab Details</th>
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</table>
| Oct. 4     | **Preparation for Lab #4: Chemical Reactions**  
ALL STUDENTS – complete pre-lab before coming to lab  
Quiz 4 – concentration and dilutions, and communication skills, and pre-lab information  
**Instruction:** Types of chemical equations, balancing chemical equations. Read syllabus about empirical and quantitative skills. Chemical Equations homework assignment given. |
| Oct. 9     | **Lab #4:**  
1) Carry out assigned chemical reaction in lab  
2) Discuss findings and write as summary and conclusion  
3) Turn in Laboratory Report before leaving lab |
| Oct 11     | **Review for midterm.**  
Quiz 5 – Identify types of reactions. |
| Oct 16 and Oct 18 | **Midterm Exam (50 pts) – ½ given on Tuesday; ½ given on Thursday** |
| Oct. 23    | **Introduction to Titration**  
**Instruction:** Review of chemical concepts needed for titration, teamwork, empirical/quantitative skills, emphasize good communication among group members to accomplish task, analyze data so conclusion(s) can be made. Information about the group teamwork rubric for assessment. Demonstrate how to perform titrations.  
**Preparation for Lab #5: Titration I: General Acid/Base Titration** – complete pre-lab before coming to lab.  
**Suggested deadline for Balancing Chemical Reactions Assignment.**  
**Quiz 6– covers information from the pre-lab,** |
| Oct. 30    | **Lab #5:**  
1) Perform practice titration using NaOH and HCl with indicator to determine endpoint quantitatively  
2) Have each team member explain one calculation to the rest of the team  
3) Discuss team plan for accomplishing tasks for next week.  
4) Turn in Laboratory Report before leaving lab |
| Nov. 1     | **Preparation for Lab #6: Titration II: Experimental Control for Antacid Titration** – complete pre-lab before coming to lab  
Quiz 7 – covers pre-lab information & titration calculations |
| Nov. 6     | **Lab #6:**  
1) Perform simple titrations using pH indicator to determine endpoint qualitatively  
2) Use data to perform titration calculations  
3) Have each team member explain one calculation to the rest of the team  
4) Discuss team plan for accomplishing task.  
5) Turn in Laboratory Report before leaving lab |
| Nov. 8     | **Preparation for Lab #7: Titration III: Comparison of Name Brand and Generic** - complete pre-lab before coming to lab  
Quiz 8: titration calculations/questions |
| Nov 13     | **Lab #7:**  
1) Perform titration using generic brand antacid  
2) Perform titration using name brand  
3) Compare results – if different then repeat.  
4) Analyze data and provide conclusion of antacid analysis.  
5) Turn in Laboratory Report before leaving lab |
| Nov. 15    | **Preparation for Lab #8: Importance of Buffers and pH**  
Discuss Report/Summary of Titration Experiment and Excel Graphs  
Discuss Teamwork rubric. **LAST CALL FOR BALANCING EQUATIONS WORKSHEET!!** |
<p>| Nov. 20    | <strong>THANKSGIVING HOLIDAYS – NO LAB</strong> |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 27</td>
<td>Lab #8: Importance of Buffers and pH</td>
</tr>
<tr>
<td></td>
<td><strong>Report/Summary of Titration Experiments</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Assignment:</strong></td>
</tr>
<tr>
<td></td>
<td>1) Determine which sample acts as a buffer</td>
</tr>
<tr>
<td></td>
<td>2) Compare reaction rate of O$_2$ production at different pH/buffers.</td>
</tr>
<tr>
<td></td>
<td>3) Turn in Laboratory Report before leaving lab.</td>
</tr>
<tr>
<td>Nov. 29</td>
<td>CHECK OUT OF LABORATORY DRAWER</td>
</tr>
<tr>
<td></td>
<td><strong>Teamwork rubric due online</strong></td>
</tr>
<tr>
<td>Dec. 04</td>
<td>TBA</td>
</tr>
<tr>
<td></td>
<td>Laboratory Final (50 pts) – covers titration labs and buffer labs</td>
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</tbody>
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